

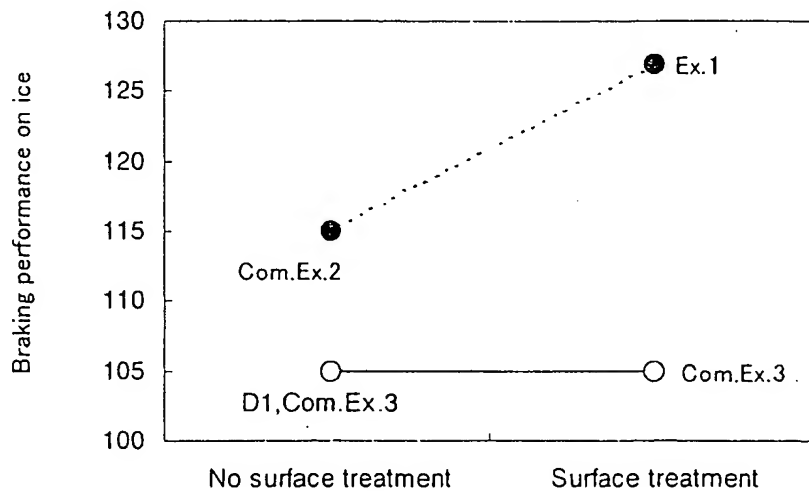
REMARKS

Claims 1-11 have been rejected the Examiner under 35 U.S.C. §103(a) as being unpatentable over Uchida et al. (EP 1 072 446) in view of Marzocchi (U.S. Patent No. 3,865,582) and Watanabe et al. (U.S. Patent Application No. 2002/0176986) and optionally further in view of Agarwal et al. (U.S. Patent No. 5,173,136). This rejection is respectfully traversed.

The present invention provides a studless tire which has superior performance on ice and snow in which adhesion friction, digging friction and scratching friction of the tire to the road and abrasion resistance are improved and maintained. The studless tire of the present invention employs the unique combination of (1) non-metal sharp fibers, for example, sharp glass fibers which have been surface treated with a treating agent comprising sulfur containing mercaptosilane and (2) incorporating the fibers into the tire such that the fibers are substantially oriented in the tread thickness direction. The advantageous improved braking properties and abrasion resistant properties of the present invention can be seen by referring to Examples 1 and 2 in Table 1 on pages 12-14 of the present application. Thus, it is the Applicants' position that when comparing the results of Examples 1 and 2 of the present application with Comparison Examples 1-5 as shown on pages 12 and 13 of the present application, as well as the four references relied upon by the Examiner, one skilled in the art would not find it obvious to combine the four references to suggest the present invention which utilizes a combination of (1) a surface treatment of non-metal sharp fibers and (2) orientation of the fibers in the tread thickness direction.

As recited in amended claim 1, the studless tire of the present invention improves not only adhesion properties, but also performance on ice that cannot be suggested from the cited references, by utilizing a combination of (1) a surface treatment of sharp glass fibers in advance by a surface treating agent comprising sulfur containing mercaptosilane and (2) dispersing the sharp glass fibers so as to be oriented in the tread thickness direction.

When comparing (1) the difference in braking performance on ice in the case of orienting the fibers in the tread thickness direction and conducting a surface treatment of the fibers (Example 1) and not conducting a surface treatment of the fibers (Comparison Example 2) and (2) comparing the difference in braking performance on ice in the case of orienting the fibers in the tread circumferential direction and conducting a surface treatment of the fibers (Comparison Example 3) and not conducting a surface treatment of the fibers (Comparison Example 3 of the Uchida reference) the braking performance on ice of this latter difference is 105 in both cases and thus is not improved regardless of whether or not a surface treatment is conducted. In contrast, the braking performance on ice of Comparison (1) is 127 and 115, respectively, with the performance on ice being improved by 12 when a surface treatment is conducted (please see the graph provided immediately below).



Thus, with the above information in mind, one skilled in the art would not arrive at the conclusion of the advantageous results achieved by a combination of the surface treatment of the non-metal sharp fibers and the orientation of the fibers in the tread thickness direction, without making use of the Applicants' own disclosure. Thus, it is believed that any possible combination of references does not suggest the Applicants' excellent results achieved by the specific combination of features referred to herein above.

As the Examiner will note, original claim 1 has been amended to specifically recite that the sharp fibers are sharp glass fibers and to further recite the surface treating agent as a sulfur-containing mercaptosilane. Also, claims 2-8, 10 and 11 have been canceled from the present application. Accordingly, it is believed that the amendments made to the claims as well as the arguments presented herein clearly distinguish the present invention from the prior art relied upon by the Examiner and thus reconsideration of the rejection and allowance of the claims of the present application are respectfully requested. In the event that the proposed amendment does not place the present application into condition for allowance, entry thereof is respectfully requested as placing the application in better condition for appeal.

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Respectfully submitted,

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